

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of the claims in the application:

Listing of Claims:

1. (currently amended) A process, comprising:
 - providing a substrate;
 - applying an anti-reflective coating comprising a polymer-based material containing a reflective material above the substrate;
 - applying a photoresist above the anti-reflective coating; and
 - patterning the photoresist with radiation, wherein the reflective material scatters the radiation within the anti-reflective coating.
2. (cancelled)
3. (cancelled)
4. (previously presented) The process of claim 1, wherein applying the anti-reflective coating comprises applying a polymer-based material further comprising a core-shell material.
5. (original) The process of claim 1, wherein patterning the photoresist with radiation comprises irradiating the photoresist with light having a wavelength selected from the group consisting of 365nm, 248nm, 193nm, 157nm, and 13.5nm.
6. (cancelled)
7. (original) The process of claim 1, further comprising etching the substrate to form a first opening.
8. (original) The process of claim 7, further comprising:

applying a sacrificial anti-reflective coating comprising a radiation path altering additive over the substrate and the first opening such that the first opening is filled with the sacrificial anti-reflective coating;

applying a photoresist over the sacrificial anti-reflective coating;

patterning the photoresist;

etching the substrate and the sacrificial anti-reflective material over the first opening to form a second opening; and

filling the first opening and the second opening with a metal.

9. (cancelled)

10. (cancelled)

11. (previously presented) The method of claim 4, wherein the core-shell material refracts and reflects light within the anti-reflective coating during the patterning of the photoresist with light.

12. (original) A method, comprising:

applying a bottom anti-reflective coating comprising a polymer and a plurality of refractive polymer beads;

applying a photoresist above the anti-reflective coating;

patterning the photoresist;

etching the substrate to form a first opening.

applying a sacrificial anti-reflective coating comprising a spin-on-polymer and a plurality of refractive polymer beads over the substrate and the first opening such that the first opening is filled with the sacrificial anti-reflective coating;

applying a photoresist over the sacrificial anti-reflective coating;

patterning the photoresist;

etching the substrate and the sacrificial anti-reflective material over the first opening to form a second opening; and

filling the first opening and the second opening with a metal.

13. (original) The method of claim 12, wherein the plurality of refractive polymer beads have a core-shell structure comprising an inorganic reflective core and an organic refractive shell.

14. (original) The method of claim 12, wherein the plurality of refractive polymer beads have a core-shell structure comprising an absorbent core and an organic refractive shell.

15-17. (cancelled)

18. (currently amended) An anti-reflective coating, comprising:
a base material; and
an additive to alter a radiation beam path comprising a reflective material, wherein the reflective material scatters the radiation beam within the anti-reflective coating.

19. (previously presented) The anti-reflective coating of claim 18, wherein the additive to alter the radiation beam path further comprises a refractive material.

20. (previously presented) The anti-reflective coating of claim 18, wherein the reflective material is selected from the group consisting of zinc oxide, titanium dioxide, calcium carbonate, diatomaceous earth, and zirconia.

21. (cancelled)

22. (previously presented) The anti-reflective coating of claim 19, wherein the refractive material is a solid polymer shell.

23. (original) The anti-reflective coating of claim 18, wherein the additive to alter the radiation beam path is a core-shell particle.

24. (original) The anti-reflective coating of claim 18, wherein the base material comprises an inorganic material.

25. (previously presented)

An antireflective coating, comprising:
a base material; and
a multi-layer mirror.

26. (previously presented) The anti-reflective coating of claim 25, further comprising a surfactant to separate pigments.

27. (previously presented) The anti-reflective coating of claim 25, wherein the anti-reflective coating is a bottom anti-reflective coating (BARC).

28. (previously presented) The anti-reflective coating of claim 25, wherein the anti-reflective coating is a sacrificial anti-reflective coating.

29. (previously presented) The anti-reflective coating of claim 25, wherein the base material is a spin-on-glass (SOG).

30. (previously presented) The anti-reflective coating of claim 25, wherein the base material is a spin-on-polymer (SOP).